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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,135	08/28/2003	Michael E. Muhle	2002B128/2	8219

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EXAMINER

CHEUNG, WILLIAM K

ART UNIT PAPER NUMBER

1713

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/651,135	Applicant(s) MUHLE ET AL.	
	Examiner William K Cheung	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 43-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. The request filed on August 19, 2004 for a Request for Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 10/651,135 is acceptable and a RCE has been established. An action on the RCE follows.
2. In view of amendment filed August 19, 2004, the rejection of claims 1-22, 42-45 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Idelmann et al. (WO 97/49771) is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-22 are rejected under 35 U.S.C. 103(a) as obvious over Idelmann et al. (WO 97/49771).

*The invention of claims 1-22 relates to a **fluidized bed reactor having a reactor wall coating**, wherein said reactor wall coating is **formed in situ on a reactor wall during polymerization of olefin monomer**, the said reactor wall coating having a **thickness of at least 100 μm** and a molecular weight distribution comprising a major peak having:*

- (a) an **M_w/M_n ratio of less than 10;***
- (b) an **M_z/M_w ratio of less than 7, and***
- (c) a **maximum value of $d(\text{wt\%})/d(\log M_w)$ at less than 25,000 daltons** in a plot of $d(\text{wt\%})/d(\log M_w)$, where M_w is the molecular weight in daltons.*

Idelmann et al. (abstract) disclose an antifouling polysulfone or polyethersulfone sulphone and polyetherimide coating for reactors, vessels, lines or other equipment. Further, Idelmann et al. (abstract) disclose that the polysulfone or polyethersulfone

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solphone and polyetherimide coating ranges from 0.1-3mm (100-3000 μm), preferably 0.3-2 mm (300-2000 μm). Since the polymers of the coating materials are based on condensation polymers which typically have molecular weight distribution of roughly about 2, the examiner has a reasonable basis that the claimed M_w/M_n ratio and M_z/M_w ratio are inherently possessed by the condensation polymers of Idelmann et al.

Therefore, in view of the substantially identical thickness, M_w/M_n ratio, and M_z/M_w ratio, the examiner has a reasonable basis to believe that the claimed maximum value of $d(\text{wt\%})/d(\log \text{MW})$, the major peak has an M_n value of less than 7000, the initial voltage potential, the V60, V120, V300, the major peak that contains at least a specific wt% of the total weight of the MWD are inherently possessed by Idelmann et al.

The difference between the invention of claims 1-22 and Idelmann et al. is that Idelmann et al. are silent on a fluidized bed reactor having a reactor wall coating.

However, Idelmann et al. (abstract) disclose an antifouling polysulfone or polyethersulfone solphone and polyetherimide coating for reactors, vessels, lines or other equipment. Idelmann et al. (page 1, line 5-23) also clearly indicates that the disclosed coatings is to be coated onto the inside wall of a fluidized bed reactor by indicating the desire to reduce the polymer build-up on the surfaces of a reactor which normally associates with the use of an antistatic agent, an agent commonly used in a fluidized bed reactor. Therefore, motivated by the expectation of success of reduce polymer build-up in a reactor, it would have been obvious to one of ordinary skill in art to

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use the anti-fouling coating teachings of Idelmann et al. with the reactor teachings in the same disclosure to obtain the invention of claims 1-22.

Regarding the claimed "formed in situ on a reactor wall during polymerization of olefin monomer" limitation, applicants must recognize that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Allowable Subject Matter

5. Claims 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art Idelmann et al. (WO 97/49771) are silent of a reactor wall comprising at least one monomer selected from the group consisting of ethylene, propylene, C₄-C₂₀ alpha olefins, bimetallic catalyst and an aluminum alkyl cocatalyst.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung

Primary Patent Examiner

September 7, 2004

**WILLIAM K. CHEUNG
PRIMARY EXAMINER**